

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

**In the Claims:**

**Claim 1 (Currently Amended):** A bias circuit for an amplifier, said bias circuit comprising:

a first bipolar transistor having a base connected to a first node, said first node connected to a reference voltage through a first resistor;

a second bipolar transistor having a base connected to said first node;

a third bipolar transistor having a collector connected to said first node and a base connected to an emitter of said first bipolar transistor at a second node, an emitter of said second bipolar transistor being connected to a base of a fourth bipolar ~~transmitter~~ transistor associated with said amplifier, said bias circuit being connected to a control circuit at said second node ~~second bipolar transistor not having a resistor connected to said emitter of said second bipolar transistor.~~

**Claim 2 (Original):** The bias circuit of claim 1, wherein an emitter size ratio of said first bipolar transistor to said second bipolar transistor is independent of an emitter size ratio of said third bipolar transistor to said fourth bipolar transistor.

**Claim 3 (Currently Amended):** The bias circuit of claim 1, ~~further comprising a control circuit connected to said second node, wherein~~ said control circuit drawing an

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

increased current during a high mode operation and drawing a reduced current during a low mode operation.

**Claim 4 (Original):** The bias circuit of claim 3, wherein said control circuit has a reduced resistance during said high mode operation and an increased resistance during said low mode operation.

**Claim 5 (Original):** The bias circuit of claim 3, wherein said control circuit comprises a fifth bipolar transistor having a collector connected to said second node through a second resistor and to ground through a third resistor, an emitter of said fifth bipolar transistor being coupled to ground, and a base of said fifth bipolar transistor connected to a control voltage through a fourth resistor.

**Claim 6 (Original):** The bias circuit of claim 1, further comprising a high-temperature gain compensation circuit connected in parallel with said first resistor, said high-temperature gain compensation circuit configured to draw current at high temperatures.

**Claim 7 (Original):** The bias circuit of claim 6, wherein said high-temperature gain compensation circuit comprises a second resistor and a Schottky diode, wherein a first end of said second resistor is connected to said reference voltage, a second end of

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

said second resistor being connected to an anode of said Schottky diode, and a cathode of said Schottky diode being connected to said first node.

**Claim 8 (Currently Amended):** A control circuit for the operation of a bias circuit, said bias circuit including a first bipolar transistor, a second bipolar transistor, and a third bipolar transistor, said first bipolar transistor having a base connected to a base of said second bipolar transistor at a first node, said first node connected to a reference voltage through a first resistor, said third bipolar transistor having a collector connected to said first node and a base connected to an emitter of said first bipolar transistor at a second node, an emitter of said second bipolar transistor being connected to a base of a fourth bipolar ~~transistor transmitter associated with said amplifier~~, said control circuit comprising:

a fifth bipolar transistor having a collector connected to said second node through a second resistor and to ground through a third resistor, an emitter of said fifth bipolar transistor being coupled to ground, and a base of said fifth bipolar transistor connected to a control voltage through a fourth resistor.

**Claim 9 (Original):** The control circuit of claim 8, wherein said control circuit draws an increased current during a high mode operation and draws a reduced current during a low mode operation

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

**Claim 10 (Original):** The control circuit of claim 9, wherein during said high mode operation, said control circuit has said total resistance equivalent to said second resistor.

**Claim 11 (Original):** The control circuit of claim 9, wherein during said low mode operation, said control circuit has a total resistance equivalent to the sum of said second resistor and said third resistor.

**Claim 12 (Original):** The control circuit of claim 9, wherein said fifth bipolar transistor is deactivated during said low mode operation, and said fifth bipolar transistor is activated during said high mode operation.

**Claim 13 (Original):** The control circuit of claim 8, wherein said second bipolar transistor does not have a resistor connected to said emitter of said second bipolar transistor.

**Claim 14 (Currently Amended):** An amplifier circuit comprising:  
a bias circuit including a first bipolar transistor, a second bipolar transistor, and a third bipolar transistor, said first bipolar transistor having a base connected to a base of said second bipolar transistor at a first node, said first node connected to a reference voltage through a first resistor, said third bipolar transistor having a collector connected

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

to said first node and a base connected to an emitter of said first bipolar transistor at a second node, said bias circuit being connected to a control circuit at said second node ~~second bipolar transistor not having a resistor connected to said emitter of said second bipolar transistor;~~

an amplifier including a fourth bipolar transistor transmitter having a base connected to an emitter of said second bipolar transistor, and an emitter coupled to ground.

**Claim 15 (Original):** The amplifier circuit of claim 14, wherein an emitter size ratio of said first bipolar transistor to said second bipolar transistor is independent of an emitter size ratio of said third bipolar transistor to said fourth bipolar transistor.

**Claim 16 (Currently Amended):** The amplifier circuit of claim 14, further comprising a control circuit connected to said second node, wherein said control circuit drawing an increased current during a high mode operation and drawing a reduced current during a low mode operation.

**Claim 17 (Original):** The amplifier circuit of claim 16, wherein said control circuit has a reduced resistance during said high mode operation and an increased resistance during said low mode operation.

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

**Claim 18 (Original):** The amplifier circuit of claim 16, wherein said control circuit comprises a fifth bipolar transistor having a collector connected to said second node through a second resistor and to ground through a third resistor, an emitter of said fifth bipolar transistor being coupled to ground, and a base of said fifth bipolar transistor connected to a control voltage through a fourth resistor.

**Claim 19 (Original):** The amplifier circuit of claim 14, further comprising a high-temperature gain compensation circuit connected in parallel with said first resistor, said high-temperature gain compensation circuit configured to draw current at high temperatures.

**Claim 20 (Original):** The amplifier circuit of claim 19, wherein said high-temperature gain compensation circuit comprises a second resistor and a Schottky diode, wherein a first end of said second resistor is connected to said reference voltage, a second end of said second resistor being connected to an anode of said Schottky diode, and a cathode of said Schottky diode being connected to said first node.

**Claim 21 (New):** The bias circuit of claim 1, wherein said second bipolar transistor does not have a resistor connected to said emitter of said second bipolar transistor.

Application Serial No.: 10/637,146  
Attorney Docket No.: 0140109

**Claim 22 (New):** The amplifier circuit of claim 14, wherein said second bipolar transistor does not have a resistor connected to said emitter of said second bipolar transistor.